

medium, insomuch that such a small particle will at diversly oblique incidences reflect all sorts of Colours, in so great a variety that the Colour resulting from them all, confusedly reflected from a heap of such particles, must rather be a white or grey than any other Colour, or at best it must be but a very imperfect and dirty Colour. Whereas if the thin body or small particle be much denser than the ambient medium, the Colours according to the 19th Observation are so little changed by the variation of obliquity, that the rays which are reflected least obliquely may predominate over the rest so much as to cause a heap of such particles to appear very intently of their Colour.

It conduces also something to the confirmation of this Proposition, that, according to the 22th Observation, the Colours exhibited by the denser thin body within the rarer, are more brisk than those exhibited by the rarer within the denser.

## P R O P. VII.

*The bigness of the component parts of natural Bodies may be conjectured by their Colours.*

For since the parts of these Bodies by Prop. 5. do most probably exhibit the same Colours with a Plate of equal thickness, provided they have the same refractive density; and since their parts seem for the most part to have much the same density with Water or Glass, as by many circumstances is obvious to collect; to determine the sizes of those parts you need only have recourse to the precedent Tables, in which the thickness of Water or Glass exhibiting any Colour is expressed. Thus  
if

if it be desired to know the Diameter of a corpuscle, which being of equal density with Glass shall reflect green of the third order; the number  $16\frac{1}{4}$  shews it to be  $\frac{16\frac{1}{4}}{100000}$  parts of an Inch.

The greatest difficulty is here to know of what order the Colour of any Body is. And for this end we must have recourse to the 4th and 18th Observations, from whence may be collected these particulars.

*Scarlets*, and other *reds*, *oranges* and *yellows*, if they be pure and intense are most probably of the second order. Those of the first and third order also may be pretty good, only the yellow of the first order is faint, and the orange and red of the third order have a great mixture of violet and blue.

There may be good *greens* of the fourth order, but the purest are of the third. And of this order the green of all vegetables seem to be, partly by reason of the intenseness of their Colours, and partly because when they wither some of them turn to a greenish yellow, and others to a more perfect yellow or orange, or perhaps to red, passing first through all the aforesaid intermediate Colours. Which changes seem to be effected by the exhaling of the moisture which may leave the tinging corpuscles more dense, and something augmented by the accretion of the oily and earthy part of that moisture. Now the green without doubt is of the same order with those Colours into which it changeth, because the changes are gradual, and those Colours, though usually not very full, yet are often too full and lively to be of the fourth order.